

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Tony W. Ho, Gene C. Kopen, William F. Righter, J. Lynn Rutkowski and Joseph Wagner

Application No.: 09/960,244

Group Art Unit: 1651

Filed: September 21, 2001

Examiner: Vera Afremova

Confirmation No.: 4326

For: Cell Populations Which Co-Express CD49c and CD90

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or is being facsimile transmitted to the United States Patent and Trademark Office on:

Dec. 22, 2003 Betsy S. Kirschner

Date Signature

Betsy S. Kirschner

Typed or printed name of person signing certificate

TRANSMITTAL OF PREVIOUSLY FILED INFORMATION DISCLOSURE STATEMENT
AND PREVIOUSLY CITED REFERENCES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

On January 22, 2002, Applicants filed, by Certificate of Mailing, an Information Disclosure Statement and PTO Form 1449 citing references AA-AJ, AL, AM, AR-AZ, AR2-AZ2, AR3-AY3. A copy of the Information Disclosure Statement, Form 1449 and date-stamped postcard receipt for the Information Disclosure Statement filed on January 22, 2002, are enclosed.

Applicants' Attorney spoke to Examiner Afremova on November 7, 2003 regarding the absence of reference to and an initialed PTO Form 1449 for the Information Disclosure

Statement filed on January 22, 2002 in the Office Action mailed from the U.S. Patent and Trademark Office on July 24, 2003. Examiner Afremova indicated that, according to the Patent Office records, the January 22, 2002 Information Disclosure Statement and accompanying PTO Form 1449 have not been entered.

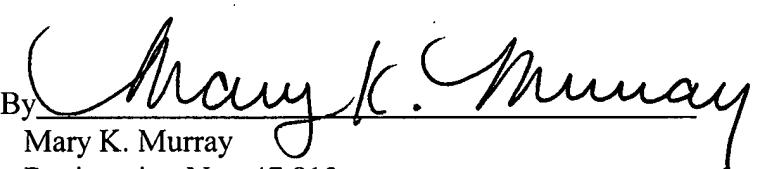
As requested by Examiner Afremova, Applicants are filing this Transmittal of Previously Cited References, a copy of the January 22, 2002 Information Disclosure Statement, accompanying PTO Form 1449, date-stamped postcard receipt and the references (AA-AJ, AL, AM, AR-AZ, AR2-AZ2, AR3-AY3) previously filed in the January 22, 2002 Information Disclosure Statement.

Although Applicants believe no fees are due in this matter, please charge any deficiencies in fees to Deposit Account No. 08-0380. One additional copy of this document is enclosed for accounting purposes.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

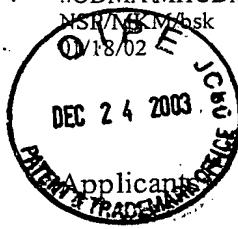
By


Mary K. Murray
Registration No.: 47,813
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated:

December 22, 2003



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants
Tony W. Ho, Gene C. Kopen, William F. Righter, J. Lynn Rutkowski and Joseph Wagner

Application No.: 09/960,244

Group Art Unit: 1633

Filed: September 21, 2001

Examiner: Not yet assigned

Title: "Cell Populations Which Co-Express CD49c and CD90"

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

on Jan. 22, 2002 *Betsy S. Kirschner*

Date Signature

Betsy S. Kirschner
Typed or printed name of person signing certificate

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

This Information Disclosure Statement is submitted:

[] under 37 CFR 1.129(a), or

(First/Second submission after Final Rejection)

[X] under 37 CFR 1.97(b), or

(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).

[] under 37 CFR 1.97(c) together with either:

[] a Statement under 37 CFR 1.97(e), as checked below, or

[] a \$180.00 fee under 37 CFR 1.17(p), or

(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)

[] under 37 CFR 1.97(d) together with:

[] a Statement under 37 CFR 1.97(e), as checked below, and

[] a \$180.00 fee under 37 CFR 1.17(p), or

(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)

[] under 37 CFR 1.97(i):

Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.

(Filed after payment of issue fee)

COPYStatement Under 37 CFR 1.97(e)

- [] Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- [] No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- [] Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.

[X] Enclosed herewith is form PTO-1449:

- [X] Copies of the cited references (AA-AJ, AL-AM, AR-AZ, AR2-AZ2 and AR3-AY3) are enclosed.
- [] Copies of cited references are enclosed except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed. [The earlier application contains copies of the cited references.]
- [] The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
- [] The "concise explanation" requirement (non-English references) for reference(s) [] under 37 CFR 1.98(a)(3) is satisfied by:
 - [] the explanation provided on the attached sheet.
 - [] the explanation provided in the Specification.
 - [] submission of the enclosed International Search Report.
 - [] the enclosed English language abstract.

COPY

[] Applicant requests that the following non-published pending applications be considered:

Examiner's
Initials

____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

____ Examiner

____ Date

[] A copy of each above-cited application, including the current claims, is enclosed.

[] A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

- [] A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.
- [] Please charge Deposit Account 08-0380 in the amount of \$[]. A copy of this Statement is enclosed.
- [X] Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Mary K. Murray
 Mary K. Murray
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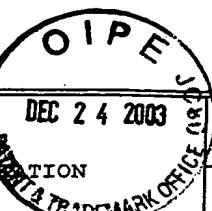
PTO-1449 REPRODUCED

DEC 24 2003

ATTORNEY DOCKET NO.
2831.2003-000APPLICATION NO.
09/960,244INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

January 18, 2002

(Use several sheets if necessary)

APPLICANT
Tony W. Ho, et al.FILING DATE
Sept. 21, 2001GROUP
1633

U.S. PATENT DOCUMENTS

EXAM- INER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	AA	5,061,620	Oct. 29, 1991	Tsukamoto, A. et al.	435	7.21	
	AB	5,197,985	Mar. 30, 1993	Caplan, A.I. et al.	623	16	
	AC	5,486,359	Jan. 23, 1996	Caplan, A.I. et al.	424	93.7	
	AD	5,591,625	Jan. 7, 1997	Gerson, S.L. et al.	435	240.2	
	AE	5,728,581	Mar 17, 1998	Schwartz, R.M. et al.	435	385	
	AF	5,736,396	Apr. 7, 1998	Bruder, S.P. et al.	435	366	
	AG	5,811,094	Sept. 22, 1998	Caplan, A.I. et al.	424	93.7	
	AH	5,942,225	Aug. 24, 1999	Bruder, S.P. et al.	424	93.7	
	AI	5,962,323	Oct. 5, 1999	Greenburger, J.S. et al.	435	384	
	AJ	6,184,035	Feb 6, 2001	Csete, M. et al.	435	377	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	AL	WO 00/69448	23 Nov 2000	PCT			x
	AM	WO 01/78753	25 Oct 2001	PCT			x

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	Akiyomo, Y. et al., "Functional Repair of Demyelinated Spinal Cord Axons in the Adult Rat by Transplantation of Clonal Neural Stem Cells Derived From Adult Human Brain," Society for Neuroscience Abstracts 25: Abstract 86.9 (1999).
AS	Azizi, S. A., et al., "Engraftment and migration of human bone marrow stromal cells implanted in the brains of albino rats-similarities to astrocyte grafts," Proc. Natl. Acad. Sci. USA 95: 3908-3913 (1998).
AT	Azizi, S. A., "Exploiting Non-neural Cells to Rebuild the Nervous System: From Bone Marrow to Brain," The Neuroscientist 6(5): 353-361 (2000).
AU	Bianco, P., et al., "Bone Marrow Stromal Stem Cells: Nature, Biology, and Potential Applications," Stem Cells 19: 180-192 (2001).
AV	Chopp, M., et al., "Spinal cord injury in rat: treatment with bone marrow stromal cell transplantation," NeuroReport 11(13): 3001-3005 (2000).

EXAMINER

DATE CONSIDERED

PTO-1449 REPRODUCED

DEC 24 2003

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

January 18, 2002

(Use several sheets if necessary)

ATTORNEY DOCKET NO.
2831.2003-0010COPY APPLICATION NO.
09/960,244APPLICANT
Tony W. Ho et al.FILING DATE
Sept. 21, 2001GROUP
1633

U.S. PATENT DOCUMENTS

EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AW	Colter, D. C. et al., "Rapid expansion of recycling stem cells in cultures of plastic-adherent cells from human bone marrow," Proc. Natl. Acad. Sci. USA 97(7): 3213-3218 (2000).
AX	Coyle, A.J., et al., "Human Mesenchymal Stomal Cells Can Differentiate into Oligodendrocyte Lineage in Transplantation Experiments with MD Rats," Soc. for Neurosci. Abs. 26: Abstract 415.11 (2000).
AY	Eglitis, M. A., et al., "Hematopoietic cells differentiate into both microglia and macroglia in the brains of adult mice," Proc. Natl. Acad. Sci. USA 94: 4080-4085 (1997).
AZ	Ferrari, G., et al., "Muscle Regeneration by Bone Marrow-Derived Myogenic Progenitors," Science 279: 1528-1530 (1998).
AR2	Himes, B. T. et al., "Grafting human bone marrow stromal cells into injured spinal cord of adult rats," Society for Neuroscience Abstracts 25: Abstract 86.11 (1999).
AS2	Kopen, G. C., et al., "Marrow stromal cells migrate throughout forebrain and cerebellum, and they differentiate into astrocytes after injection into neonatal mouse brains," Proc. Natl. Acad. Sci. USA 96: 10711-10716 (1999).
AT2	Li, J., et al., "Nontransformed colony-derived stromal cell lines from normal human marrows. II. Phenotypic characterization and differentiation pathway," Experimental Hematology 23: 133-141 (1995).
AU2	Liechty, K. W., et al., "Human mesenchymal stem cells engraft and demonstrate site-specific differentiation after in utero transplantation in sheep," Nature Medicine 6(11): 1282-1286 (2000).
AV2	Majumdar, M .K., et al., "Phenotypic and Functional Comparison of Cultures of Marrow-Derived Mesenchymal Stem Cells (MSCs) and Stromal Cells," J. Cell. Phys. 176: 57-66 (1998).
AW2	Pereira, M. K., et al., "Cultured adherent cells from marrow can serve as long-lasting precursor cells for bone, cartilage, and lung in irradiated mice," Proc. Natl. Acad. Sci. USA 92: 4857-4861 (1995).

EXAMINER

DATE CONSIDERED

PTO-1449 REPRODUCED FOR GOVERNMENT USE

DEC 24 2003

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

January 18, 2002

(Use several sheets if necessary)

COPYATTORNEY DOCKET NO.
2831.2003-000APPLICATION NO.
09/960,244

APPLICANT

Tony W. Ho, et al.

FILING DATE

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U.S. PATENT DOCUMENTS

EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AX2	Phinney, D. G., et al., "Donor Variation in the Growth Properties and Osteogenic Potential of Human Marrow Stromal Cells," <i>J. Cell. Biochem.</i> 75: 424-436 (1999).
AY2	Phinney, D. G., et al., "Plastic Adherent Stromal Cells From the Bone Marrow of Commonly Used Strains of Inbred Mice: Variations in Yield, Growth, and Differentiation," <i>J. Cell. Biochem.</i> 72: 570-585 (1999).
AZ2	Pittenger, M. F., et al., "Multilineage Potential of Adult Human Mesenchymal Stem Cells," <i>Science</i> 284: 143-147 (1999).
AR3	Prockop, D. J., "Marrow Stromal Cells as Stem Cells for Nonhematopoietic Tissues," <i>Science</i> 276: 71-74 (1997).
AS3	Roisen, F. J., et al., "Murine and Human Adult Olfactory Neuroepithelial Stem Cells," <i>Society for Neuroscience Abstracts</i> 26: Abstract 312.7 (2000).
AT3	Sanchez-Ramos, J., et al., "Adult Bone Marrow Stromal Cells Differentiate into Neural Cells in Vitro," <i>Experimental Neurology</i> 164: 247-256 (2000).
AU3	Sanchez-Ramos, J., et al., "Bone marrow stromal cells grafted into adult rat brain migrate, organize in architectonic patterns and express neuronal markers," <i>Neurology</i> 52(6 SUPPL. 2): A14, S06.001 (1999).
AV3	Schwartz, E. J., et al., "Multipotential Marrow Stromal Cells Transduced to Produce L-DOPA: Engraftment in a Rat Model of Parkinson Disease," <i>Human Gene Therapy</i> 10: 2539-2549 (1999).
AW3	Taupin, P., et al., "FGF-2-Responsive Neural Stem Cell Proliferation Requires CCg, a Novel Autocrine/Paracrine Cofactor," <i>Neuron</i> 28: 385-397 (2000).
AX3	Woodbury, D., et al., "Adult Rat and Human Bone Marrow Stromal Cells Differentiate Into Neurons," <i>J. Neurosci. Res.</i> 61: 364-370 (2000).
AY3	Woodbury, D., et al., "Adult Rat and Human Bone Marrow Stromal Cells Differentiate Into Neurons," <i>Society for Neuroscience Abstracts</i> 26: Abstract 312.9 (2000).

EXAMINER

DATE CONSIDERED



COPY

Initials: NSP/MKM/bsk Docket No.: 2831.2003-000 Date: January 22, 2002

This is to acknowledge receipt of the following documents each filed under Certificate of Mailing Procedure 37 C.F.R. 1.8:

INFORMATION DISCLOSURE STATEMENT w/copy
 Form PTO-1449 pp 3 with references (AA-AJ, AL-AM, AR-AZ,
AR2-AZ2 and AR3-AY3) as noted in 1449

- Check for \$_____
 Authorization to Charge all Fees
 Other _____

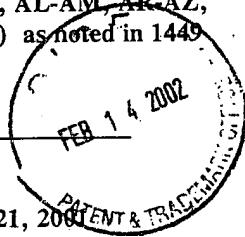
Applicants: Tony Ho, et al.

Application No.: 09/960,244

Filed: Sept 21, 2000

Title: Cell Populations Which Co-Express CD49c and CD90

Date received by the PTO:



DEC 24 2003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Tony W. Ho, Gene C. Kopen, William F. Righter, J. Lynn Rutkowski and Joseph Wagner

Application No.: 09/960,244 Group Art Unit: 1651

Filed: September 21, 2001 Examiner: Vera Afremova

Confirmation No.: 4326

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Dec. 23, 2003 *Betsy S. Kirschner*

Date Signature

Betsy S. Kirschner

Typed or printed name of person signing certificate

EIGHTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Eighth Information Disclosure Statement is submitted:

[] under 37 CFR 1.129(a), or

(First/Second submission after Final Rejection)

[] under 37 CFR 1.97(b), or

(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).

[X] under 37 CFR 1.97(c) together with either:

[] a Statement under 37 CFR 1.97(e), as checked below, or

[X] a \$180.00 fee under 37 CFR 1.17(p), or

(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)

[] under 37 CFR 1.97(d) together with:

[] a Statement under 37 CFR 1.97(e), as checked below, and

[] a \$180.00 fee under 37 CFR 1.17(p), or

(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)

[] under 37 CFR 1.97(i):

Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.
(Filed after payment of issue fee)

01/05/2004 CRRAU1 00000065 09960244 180.00 0P
02 FC:1806

Statement Under 37 CFR 1.97(e)

- Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

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[X] Enclosed herewith is form PTO-1449:

[X] Copies of the cited references are enclosed.

[] Since this application was filed after June 30, 2003, copies of issued U.S. patents and published U.S. applications are not required and are not being provided.

[] Copies of the cited references are enclosed except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed. [The earlier application contains copies of the cited references.]

[] The listed references were cited in the enclosed International Search Report in a counterpart foreign application.

[] The "concise explanation" requirement (non-English references) for reference(s) [] under 37 CFR 1.98(a)(3) is satisfied by:

[] the explanation provided on the attached sheet.

[] the explanation provided in the Specification.

[] submission of the enclosed International Search Report.

[] submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.

[] the enclosed English language abstract.

[] Applicant requests that the following non-published pending applications be considered:

Examiner's
Initials

- ____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []
____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []
____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

Examiner

Date

- [] A copy of each above-cited application, including the current claims, is enclosed.
[] A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed.

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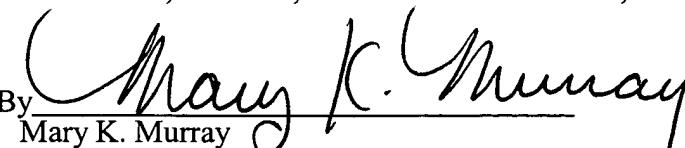
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By 
Mary K. Murray
Registration No.: 47,813
Telephone: (978) 341-0036
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Concord, MA 01742-9133

Dated: December 22, 2003

PTO-1449 REPRODUCED

ATTORNEY DOCKET NO.
2831.2003-000APPLICATION NO.
09/960,244

APPLICANT

Tony W. Ho, *et al.*

FILING DATE

September 21, 2001

CONFIRMATION NO.

4326

GROUP

1651

SUPPLEMENTAL INFORMATION DISCLOSURE
CITATION
IN AN APPLICATION

November 6, 2003

(use several sheets if necessary)



U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF. NO.	DOCUMENT NUMBER	ISSUE DATE / PUBLICATION DATE	NAME
	AA3			
	AB3			
	AC3			
	AD3			
	AE3			
AF3	2001/0034061 A1		October 25, 2001	Csete, <i>et al.</i>
AG3				
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EXAMINER

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